



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2013-0425; Directorate Identifier 2012-NM-224-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; The Boeing Company Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Supplemental notice of proposed rulemaking (NPRM); reopening of comment period.

**SUMMARY:** We are revising an earlier proposed airworthiness directive (AD) for certain The Boeing Company Model 747 airplanes. The NPRM proposed to require repetitive inspections for cracking in the bulkhead splice fitting, frame supports, forward and aft inner chords, and floor support; an inspection for cracking in the bulkhead upper web, doubler, and bulkhead lower web; and corrective actions if necessary; for certain airplanes, inspections for cracking in the repaired area of the bulkhead, and corrective actions if necessary; for certain airplanes, support frame modification and support frame inspections, and related investigative and corrective actions, if necessary; for certain airplanes, repetitive support frame post-modification inspections and inspections for cracking in the hinge support, and related investigative and corrective actions if necessary; for certain airplanes, a one-time inspection of the frame web and upper shear deck (floor support) chord aft side for fasteners; and a one-time inspection of the upper forward inner chord, frame support fitting and splice fitting, for the installation of certain fasteners; and related investigative and corrective actions if necessary; for certain airplanes, a one-time inspection of the upper forward inner chord, frame support fitting and splice fitting for the installation of certain fasteners; a one-time inspection for any repair installed on the left and right side of the aft inner chord, and related investigative

and corrective actions, if necessary; for certain airplanes, a one-time inspection of the support frame outer chords for cracking, and repair if necessary; and repetitive support frame post-repair inspections, and corrective actions, if necessary. The NPRM was prompted by reports of cracking in the forward and aft inner chord of the body station (BS) 2598 bulkhead near the upper corners of the cutout for the horizontal stabilizer rear spar, and cracking in the bulkhead upper and lower web panels near the inner chord to shear deck connection. This action revises the NPRM by adding an optional terminating action for certain inspections and expanding the inspection area for certain surface and open-hole HFEC inspections. We are proposing this supplemental NPRM (SNPRM) to detect and correct fatigue cracking of the BS 2598 bulkhead structure, which could adversely affect the structural integrity of the bulkhead and the horizontal stabilizer support structure and result in loss of controllability of the airplane. Since these actions impose an additional burden over that proposed in the NPRM, we are reopening the comment period to allow the public the chance to comment on these proposed changes.

**DATES:** We must receive comments on this SNPRM by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE.,

Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue S.W., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Nathan Weigand, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6428; fax: 425-917-6590; email: [nathan.p.weigand@faa.gov](mailto:nathan.p.weigand@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2013-0425; Directorate Identifier 2012-NM-224-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all

comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

## **Discussion**

We issued an NPRM to amend 14 CFR part 39 to include an AD that would apply to certain The Boeing Company Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SR, and 747SP series airplanes, certificated in any category. The NPRM published in the Federal Register on May 28, 2013 (78 FR 31867). The NPRM proposed to require repetitive inspections for cracking in the bulkhead splice fitting, frame supports, forward and aft inner chords, and floor support; doing an inspection for cracking in the bulkhead upper web, doubler, and bulkhead lower web; and corrective actions if necessary; for certain airplanes, inspections for cracking in the repaired area of the bulkhead, and corrective actions if necessary; for certain airplanes, support frame modification and support frame inspections, and related investigative and corrective actions, if necessary; for certain airplanes, repetitive support frame post-modification inspections and inspections for cracking in the hinge support, and related investigative and corrective actions if necessary; for certain airplanes, a one-time inspection of the frame web and upper shear deck (floor support) chord aft side for fasteners; and a one-time inspection of the upper forward inner chord, frame support fitting and splice fitting, for the installation of certain fasteners; and related investigative and corrective actions if necessary; for certain airplanes, a one-time inspection of the upper forward inner chord, frame support fitting and splice fitting for the installation of certain fasteners; a one-time inspection for any repair installed on the left and right side

of the aft inner chord, and related investigative and corrective actions, if necessary; for certain airplanes, a one-time inspection of the support frame outer chord for cracking, and repair if necessary; and repetitive support frame post-repair inspections, and corrective actions, if necessary.

#### **Actions Since Previous NPRM (78 FR 31867, May 28, 2013) was Issued**

Since we issued the NPRM (78 FR 31867, May 28, 2013), we have received Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013, which extends the open-hole HFEC inspection for cracking to include more fastener holes common to the upper and lower splice fittings on both sides of the bulkhead, plus some additional fastener holes adjacent to the lower splice fitting. Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013, also extends the surface HFEC inspection for cracking to include the fillet radius area of the upper splice fitting. Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013, clarifies compliance times for the initial surface HFEC inspection of the upper web for airplanes modified or repaired before the upper web inspection was added. Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013, also adds an optional terminating modification for certain inspections.

#### **Comments**

We gave the public the opportunity to comment on the NPRM (78 FR 31867, May 28, 2013). The following presents the comments received on the NPRM (78 FR 31867, May 28, 2013) and the FAA's response to each comment.

#### **Request to Replace the NPRM (78 FR 31867, May 28, 2013)**

Atlas Air, Inc. requested that the NPRM (78 FR 31867, May 28, 2013) be replaced with four separate ADs. The commenter stated that having a separate AD for Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013; Boeing Service Bulletin 747-53A2449, Revision 2, dated March 14, 2002; Boeing Alert Service

Bulletin 747-53A2467, Revision 1, dated April 28, 2005; and Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011; would simplify the requirements and future supersedures. The commenter also stated that separate ADs will ease the burden on the operators.

We disagree with replacing the NPRM (78 FR 31867, May 28, 2013). Increasing the number of ADs to four does not necessarily ease the operator burden. We find that delaying this action to resubmit as a separate AD, would be inappropriate in light of the urgency of the identified unsafe condition. No changes have been made to this SNPRM in this regard.

#### **Request for Alternative Method of Compliance (AMOC) Approval for Previously Approved AMOCs**

Atlas Air, Inc. requested that AMOCs approved for paragraphs (i), (j), (m), (n), (o), (p), (q), (r), (s), (t), (u), and (v), of AD 2010-14-07 (75 FR 38001, July 1, 2010), be approved as AMOCs to the corresponding actions of the NPRM (78 FR 31867, May 28, 2013).

We agree with the request. Although the actions in some of the paragraphs referenced above carry over to paragraphs (g), (h), (i), (j), (k), and (l) of this SNPRM, AD 2010-14-07 (75 FR 38001, July 1, 2010) was superseded and added new inspections and requirements, for which previously approved AMOCs would not provide coverage. We have added new paragraph (q)(4) to this SNPRM stating that previously approved AMOCs for AD 2010-14-07 are approved for the corresponding actions in this SNPRM. All actions specified in paragraphs (g), (h), (i), (j), (k), and (l) of this SNPRM that are not identified in the AMOC must still be done.

**Request Authorization of Modification in Boeing Service Bulletin 747-53A2837 as an AMOC to Requirements of Paragraphs (j), (k), and (l) of the NPRM (78 FR 31867, May 28, 2013)**

Atlas Air, Inc. requested that the NPRM (78 FR 31867, May 28, 2013) be revised to authorize the modification in Boeing Service Bulletin 747-53A2837 as an AMOC to the requirements of paragraphs (j), (k), and (l) of the NPRM.

We agree with the request. Boeing Service Bulletin 747-53A2837, dated July 13, 2012, was approved as an AMOC to AD 2010-14-07 (75 FR 38001, July 1, 2010). Accomplishing the modification of the bulkhead at BS 2598, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-53A2837, dated July 13, 2012, terminates the requirements of paragraphs (g), (h), (i), (j), (k), and (l) of this AD. We have added new paragraph (n) to this SNPRM to provide this optional terminating modification.

**Request for Clarification of Language in Paragraph (g) of the NPRM (78 FR 31867, May 28, 2013)**

Boeing requested that we delete the phrase, “and doubler,” and add the word, “assembly” to bulkhead upper web and bulkhead lower web in paragraph (g) of the NPRM (78 FR 31867, May 28, 2013). Boeing stated that the language in Boeing Alert Service Bulletin 747-53A2427, Revision 6, dated July 14, 2011, was in error and this requested change clarifies the NPRM to match the intent of this service bulletin.

We agree to clarify the language and have made the requested changes to paragraph (g) of this SNPRM accordingly.

**Request for Clarification of Language in Paragraph (m)(5) and (m)(6) of the NPRM (78 FR 31867, May 28, 2013)**

Boeing requested that we add the phrase “bonded web” to the word “doubler” in paragraphs (m)(5) and (m)(6) of the NPRM (78 FR 31867, May 28, 2013). Boeing stated that the language in Boeing Alert Service Bulletin 747-53A2427, Revision 6, dated July 14, 2011, was in error and this requested change clarifies the NPRM to match the

intent of this service bulletin. Boeing also requested that we add the phrase “if present” to paragraph (m)(6) of the NPRM.

We agree to clarify the language and have made the requested changes to paragraphs (m)(5) and (m)(6) of this SNPRM accordingly. We have also added the phrase “if present” to paragraph (m)(6) of this SNPRM.

### **Request to Correct Compliance Time**

Boeing requested that we correct the compliance time specified in paragraph (m)(2) of the NPRM (78 FR 31867, May 28, 2013) to be from the effective date of AD 2010-14-07, Amendment 39-16352 (75 FR 38001, July 1, 2010). Boeing Alert Service Bulletin 747-53A2427, Revision 6, dated July 14, 2011, was not mandated by AD 2006-05-06, Amendment 39-14503 (71 FR 12125, March 9, 2006).

We agree with the request and have made the change to paragraph (m)(2) of this SNPRM accordingly.

### **Other Changes to SNPRM**

We have updated paragraphs (c), (g), (h), (i), (m), and (o) of this SNPRM to refer to Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013. We have also added the area of the upper and lower web panels to the open hole and surface HFEC inspections specified in paragraph (g) of this SNPRM. We have clarified the affected airplanes for paragraph (g) of this SNPRM by qualifying the airplanes to those on which an interim modification or aft inner chord repair has not been done, as specified in Boeing Alert Service Bulletin 747-53A2427. We have also provided credit for Boeing Alert Service Bulletin 747-53A2427, Revision 6, dated July 14, 2011, provided that the additional actions added in Boeing Alert Service Bulletin 747-53A2427, Revision 7,

dated July 19, 2013, are done within the applicable compliance times specified in paragraphs (g), (h), and (i) of this SNPRM.

### **FAA's Determination**

We are proposing this SNPRM because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of these same type designs. Certain changes described above expand the scope of the NPRM (78 FR 31867, May 28, 2013). As a result, we have determined that it is necessary to reopen the comment period to provide additional opportunity for the public to comment on this SNPRM.

### **Proposed Requirements of the SNPRM**

This SNPRM would require accomplishing the actions specified in the service information described previously.

### **Costs of Compliance**

We estimate that this proposed AD affects 184 airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

<b>Estimated costs</b>				
<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Inspection	49 work-hours X \$85 per hour = \$4,165 per inspection cycle	\$0	\$4,165 per inspection cycle	\$766,360 per inspection cycle
Support frame modification	315 work-hours X \$85 per hour = \$26,775	\$0	\$26,775	Up to \$4,926,600

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Support frame upper corner fastener inspection	16 work-hours X \$85 per hour = \$1,360	\$0	\$1,360	Up to \$250,240
Support frame post-modification inspection	200 work hours X \$85 per hour = \$17,000	\$0	\$17,000	\$3,128,000

We estimate the following costs to do any necessary interim modification that would be required based on the results of the proposed inspection. We have no way of determining the number of aircraft that might need this interim modification:

#### **On-condition costs**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>
Interim modification	4 work-hours X \$85 per hour = \$340	\$0	\$340

We have received no definitive data that would enable us to provide a cost estimate for the corrective actions specified in this proposed AD.

#### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs" describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority

because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

**The Boeing Company:** Docket No. FAA-2013-0425; Directorate Identifier 2012-NM-224-AD.

**(a) Comments Due Date**

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

This AD affects AD 2010-14-07, Amendment 39-16352 (75 FR 38001, July 1, 2010).

**(c) Applicability**

This AD applies to The Boeing Company Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SR, and 747SP series airplanes, certificated in any category, as identified in Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013.

**(d) Subject**

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 53, Fuselage.

**(e) Unsafe Condition**

This AD was prompted by reports of cracking in the forward and aft inner chord of the body station (BS) 2598 bulkhead near the upper corners of the cutout for the horizontal stabilizer rear spar, and cracking in the bulkhead upper and lower web panels near the inner chord to shear deck connection. We are issuing this AD to detect and correct fatigue cracking of the BS 2598 bulkhead structure, which could adversely affect the structural integrity of the bulkhead and the horizontal stabilizer support structure and result in loss of controllability of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Inspections of the Bulkhead (Support Frame)**

For airplanes on which the bulkhead (support frame) modification specified in Boeing Service Bulletin 747-53A2473 or 747-53A2837 has not been accomplished, and on which an interim modification or aft inner chord repair has not been done as specified in Boeing Alert Service Bulletin 747-53A2427: At the applicable times specified in paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013, except as provided by paragraph (m)(1), (m)(2), or (m)(3) of this AD, as applicable, do an open-hole and surface high frequency eddy current (HFEC) inspection for cracking in the bulkhead (support frame), which includes the bulkhead splice fitting, frame supports, forward and aft inner chords, floor supports, and upper and lower web panels; do a surface HFEC inspection for cracking in the bulkhead upper web assembly; do an open-hole and surface HFEC inspection for cracking in the bulkhead lower web assembly; and do all applicable corrective actions; in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013, except as required by paragraphs (m)(4), (m)(5) and (m)(6) of this AD, and except as provided by paragraph (h) of this AD. Do all applicable corrective actions before further flight. Repeat the applicable inspections, thereafter, at the applicable times in paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013. Doing the modification required by paragraph (j) of this AD terminates the repetitive inspections required by this paragraph.

**(h) Interim Modification**

For airplanes in groups 1 and 2, as identified in Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013, on which no cracking was found during any inspection required by paragraph (g) of this AD: At the applicable times specified in paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013, except as provided by paragraph (m)(2) of this AD, do

the interim modification, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013. Doing the interim modification terminates the repetitive inspections requirement of paragraph (g) of this AD in the area of the modification only. The repetitive inspections of the bulkhead lower web, as specified in paragraph (g) of this AD, must be done. If the aft inner chord repair or upper web repair specified in Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013, has been accomplished, an interim modification on the side of the airplane that has the repair is not required by this paragraph.

**(i) Post-Repair Inspection or Post-Interim Modification Inspection**

For airplanes on which an interim modification, or aft inner chord repair, or upper web repair has been done as specified in paragraph (g) or (h) of this AD: At the applicable times specified in paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013, except as specified in paragraph (m)(1), (m)(2), or (m)(3) of this AD, as applicable, do the actions specified in paragraph (i)(1) and (i)(2) of this AD, and all applicable corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013, except as required by paragraph (m)(4) of this AD. Do all applicable corrective actions before further flight. Repeat the inspections thereafter at the applicable intervals specified in paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013. Doing the modification required by paragraph (j) of this AD terminates the repetitive inspections required by this paragraph.

(1) Do forward side surface HFEC inspections for cracking of the bulkhead forward inner chord, splice fitting, and frame support.

(2) Do surface and open-hole HFEC inspections for cracking in the repaired and modified areas of the bulkhead, as applicable.

**(j) Bulkhead (Support Frame) Modification and Inspections**

For airplanes on which the bulkhead (support frame) modification specified in Boeing Service Bulletin 747-53A2473, dated March 24, 2005; Revision 1, dated February 20, 2007; Revision 2, dated August 28, 2009; Revision 3, dated July 14, 2011; or Revision 4, dated December 1, 2011; has not been done as of the effective date of this AD: At the applicable time in tables 2 and 3 of paragraph 1.E., “Compliance,” of Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011, do the bulkhead (support frame) modification and inspections and all applicable related investigative and corrective actions; in accordance with steps 3.B.3., 3.B.4., and 3.B.5. of the Accomplishment Instructions of Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011, except as required by paragraph (m)(4) of this AD. Do all applicable related investigative and corrective actions before further flight. Doing the modification in this paragraph terminates the inspections required by paragraphs (g) and (i) of this AD.

**(k) Post Modification Inspections**

(1) For airplanes on which the bulkhead (support frame) modification has been done as specified in Boeing Service Bulletin 747-53A2473, dated March 24, 2005; Revision 1, dated February 20, 2007; Revision 2, dated August 28, 2009; Revision 3, dated July 14, 2011; or Revision 4, dated December 1, 2011: Except as provided by paragraphs (m)(7) and (m)(8) of this AD, at the applicable time in tables 6, 7, 8, and 9 of paragraph 1.E., “Compliance” of Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011, do support frame post-modification inspections, and open-hole HFEC inspections for cracking in the hinge support, and do all applicable related investigative and corrective actions, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011, except as required by paragraph (m)(4). Do all applicable related investigative and corrective

actions before further flight. Repeat the inspections thereafter at the applicable times in tables 6, 7, 8, and 9 of paragraph 1.E., “Compliance,” of Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011.

(2) For airplanes on which the support frame modification has been done as specified in Boeing Service Bulletin 747-53A2473, Revision 1, dated February 20, 2007: Except as specified in paragraphs (m)(7) and (m)(8) of this AD, at the applicable time in tables 4 and 5 of paragraph 1.E., “Compliance” of Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011, do a one-time general visual inspection of the frame web and upper shear deck (floor support) chord aft side for fasteners that were installed as part of an inner chord repair removal; and a one-time general visual inspection of the upper forward inner chord, frame support fitting and splice fitting, for the installation of certain fasteners; and do all applicable related investigative and corrective actions; in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011, except as required by paragraph (m)(4) of this AD. Do all applicable related investigative and corrective actions at the applicable times specified in tables 4 and 5 of paragraph 1.E., “Compliance” of Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011.

(3) For airplanes on which the support frame modification has been done as specified in Boeing Service Bulletin 747-53A2473, dated March 24, 2005: Except as specified in paragraphs (m)(7) and (m)(8) of this AD, at the applicable time in tables 5 and 10 of paragraph 1.E., “Compliance” of Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011, do a one-time general visual inspection of the upper forward inner chord, frame support fitting, and splice fitting for the installation of certain fasteners; a one-time general visual inspection for any repair installed on the left and right side of the aft inner chord; and do all applicable related investigative and corrective

actions; in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011, except as required by paragraph (m)(4) of this AD. Do all applicable related investigative and corrective actions at the applicable times specified in tables 5 and 10 of paragraph 1.E., “Compliance” of Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011.

(4) For airplanes on which a post-modification inspection was done in accordance with paragraph 3.B.8. of Part 1 of the Accomplishment Instructions of Boeing Service Bulletin 747-53A2473, Revision 3, dated July 14, 2011: Except as required by paragraphs (m)(7) and (m)(8) of this AD, at the applicable time in table 11 of paragraph 1.E., “Compliance” of Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011, do a one-time surface HFEC inspection of the support frame outer chord for cracking, in accordance with Part 1 of the Accomplishment Instructions of Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011. If any cracking is found, repair before further flight, using a method approved in accordance with the procedures specified in paragraph (q) of this AD.

**(l) Post-Modification Post-Repair Inspections**

For airplanes on which post-modification inspection cracks were repaired by doing the installation of an upper or lower corner post-modification web crack repair as specified in Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011: At the applicable times specified in tables 6 and 8 of paragraph 1.E., “Compliance” of Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011, do a bulkhead (support frame) post-repair inspection, and do all applicable corrective actions, in accordance with paragraph a., b., or c. of Part 4 of paragraph 3.B.8 of the Accomplishment Instructions of Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011, as applicable, except as required by paragraph (m)(4) of this

AD. Repeat the inspection, thereafter, at the applicable times specified in tables 6 and 8 of paragraph 1.E., “Compliance,” of Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011.

**(m) Exceptions**

(1) Where Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013, specifies a compliance time after the date on Revision 2 of this service bulletin, this AD requires compliance within the specified compliance time as of August 28, 2001 (the effective date of AD 2001-15-03, Amendment 39-12337 (66 FR 38365, July 24, 2001)).

(2) Where Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013, specifies a compliance time after the date on Revision 4 of this service bulletin, this AD requires compliance within the specified compliance time as of August 5, 2010 (the effective date of AD 2010-14-07, Amendment 39-16352 (75 FR 38001, July 1, 2010)).

(3) Where Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013, specifies a compliance time after the date on Revision 6 or Revision 7 of this service bulletin, this AD requires compliance within the specified compliance time “after the effective date of this AD.”

(4) If any cracking is found during any inspection required by this AD, and Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013; or Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011; specifies to contact Boeing for appropriate action: Before further flight, repair the crack using a method approved in accordance with the procedures specified in paragraph (q) of this AD.

(5) If, during any inspection required by paragraph (g) of this AD, any cracking is found in the bonded web doubler, before further flight, repair, using a method approved in accordance with the procedures specified in paragraph (q) of this AD.

(6) Where Part 1 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013, specifies accomplishing

inspections for cracks for forward and aft inner chords, splice fittings, floor supports, and upper and lower web panels, this AD also requires doing an open-hole HFEC inspection of the bonded web doubler if present.

(7) Where Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011, specifies a compliance time after the date on Revision 2 of that service bulletin, this AD requires compliance within the specified compliance time as of August 5, 2010 (the effective date of AD 2010-14-07, Amendment 39-16352 (75 FR 38001, July 1, 2010)).

(8) Where Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011, specifies a compliance time after the date on Revision 3 or 4 of that service bulletin, this AD requires compliance within the specified compliance time “after the effective date of this AD.”

**(n) Optional Termination Modification**

Accomplishing the modification of the bulkhead at body station 2598, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-53A2837, dated July 13, 2012, terminates the requirements of paragraphs (g), (h), (i), (j), (k), and (l) of this AD, except where Boeing Service Bulletin 747-53A2837, dated July 13, 2012, specifies to contact Boeing for appropriate action: Before further flight, repair the crack using a method approved in accordance with the procedures specified in paragraph (q) of this AD.

**(o) Terminating Action for Certain Requirements of AD 2010-14-07, Amendment 39-16352 (75 FR 38001, July 1, 2010)**

(1) Accomplishing the inspections, repairs, and modification in accordance with Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011, is a terminating action for the corresponding inspections, repairs, and modification at the STA 2598 support frame required by paragraphs (i), (j), (k), (l), (m), (n), (o), (p), (q), (r), (s), (t), (u), and (v) of AD 2010-14-07, Amendment 39-16352 (75 FR 38001, July 1,

2010). Where Boeing Service Bulletin 747-53A2473, Revision 4, dated December 1, 2011, specifies to contact Boeing for repair instructions, the repair instructions must be approved by the FAA in accordance with paragraph (q) of this AD. All provisions of AD 2010-14-07 that are not specifically referenced in this paragraph remain fully applicable and must be complied with.

(2) Accomplishing the inspections, repairs and interim modification in accordance with Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013, is a terminating action for the corresponding inspections, repairs and interim modification at the STA 2598 bulkhead required by paragraphs (i), (j), (o), (s), (t), (u), and (v) of AD 2010-14-07, Amendment 39-16352 (75 FR 38001, July 1, 2010). When Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013, specifies to contact Boeing for repair data, the repair data must be approved by the FAA in accordance with paragraph (q) of this AD. All provisions of AD 2010-14-07 that are not specifically referenced in this paragraph remain fully applicable and must be complied with.

**(p) Credit for Previous Actions**

This paragraph provides credit for the actions required by paragraphs (g), (h), (i), and (n)(2) of this AD, if those actions were performed before the effective date of this AD using Boeing Alert Service Bulletin 747-53A2427, Revision 6, dated July 14, 2011, provided that the additional actions added in Boeing Alert Service Bulletin 747-53A2427, Revision 7, dated July 19, 2013, are done within the applicable compliance times specified in paragraphs (g), (h), and (i) of this AD.

**(q) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Seattle Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal

inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in paragraph (r)(1) of this AD. Information may be emailed to:

[9-ANM-Seattle-ACO-AMOC-Requests@faa.gov](mailto:9-ANM-Seattle-ACO-AMOC-Requests@faa.gov).

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO to make those findings. For a repair method to be approved, the repair must meet the certification basis of the airplane and the approval must specifically refer to this AD.

(4) Related portions or applicable paragraphs of AMOCs approved previously for AD 2010-14-07, Amendment 39-16352 (75 FR 38001, July 1, 2010), are approved as AMOCs for the related corresponding provisions of paragraphs (g), (h), (i), (j), (k), and (l) of this AD. All new actions specified in paragraphs (g), (h), (i), (j), (k), and (l) of this AD that are not identified in the AMOCs must still be done.

**(r) Related Information**

(1) For more information about this AD, contact Nathan Weigand, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6428; fax: 425-917-6590; email: [nathan.p.weigand@faa.gov](mailto:nathan.p.weigand@faa.gov).

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet

<https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue S.W., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on December 20, 2013.

Jeffrey E. Duven,  
Manager,  
Transport Airplane Directorate,  
Aircraft Certification Service.

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